

II. Remarks

A. Introduction.

Reconsideration and allowance of the subject application are respectfully requested. Upon entry of this amendment, Claims 1-7, 9, and 11-15 will be pending in the application. Of the examined claims, Claims 1, 14, and 15 are independent. No claim amendments have been made by this Response. No new matter has been added.

B. The addition of any rubbery copolymer to a rigid homopolymer coupling agent will materially affect the properties of the resultant fiber-filled composition.

Claims 1-3, 5-7, 9 and 11-14 stand rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 6,716,928 to Botros, et al. (hereinafter "Botros"). Applicant traverses the rejection in view of the following arguments.

Independent Claims 1, 14, and 15 recite a coupling agent consisting essentially of a base polypropylene homopolymer and at least one polar monomer grafted thereto. Such a coupling agent provides for improvements in interfacial adhesion while maintaining the tensile modulus, e.g., maintaining rigidity, of the natural fiber-filled polypropylene composition. (Present specification, page 5, lines 17-18). Importantly, Claims 1, 14, and 15 do not recite any rubbery copolymers such as propylene-ethylene copolymer.

The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. (See, e.g., *In re Herz*, 537 F.2d 549, 551-52, (CCPA 1976) (emphasis in original)).

Unlike the present invention, Botros discloses "functionalized products . . . obtained using specific propylene-ethylene impact copolymers . . . [that] are reactor-made intimate mixtures of propylene homopolymer and propylene-ethylene copolymer." (Botros, column 4, lines 30-35). Botros clearly differentiates the propylene homopolymer, which makes up a crystalline phase, from the propylene-ethylene copolymer, which makes up an *amorphous or rubber phase*. Importantly, Botros' coupling agents have *rubber contents*, which make it possible to obtain the high graft contents and lower melt flow rates. (Botros, column 4, lines 30-60). Further, Botros states that it is necessary to employ these specific impact co-polymers to achieve improved results. (Botros, column 3, lines 26-33).

As demonstrated by the previously filed Declaration, using a rubbery copolymer in a coupling agent will have an adverse effect on the tensile modulus or stiffness of the resultant

fiber-filled composition into which the coupling agent is incorporated. In an August 19, 2009 Response, Applicants submitted the Declaration of Dr. William Sigworth. The Response and the Declaration are hereby incorporated by reference in their entireties. The Declaration presented data that clearly demonstrated that the addition of generally rubbery copolymers or terpolymers to a natural fiber-filled composition would be expected to reduce the tensile modulus or stiffness of the composition. The tests in the Declaration utilized a rubbery maleic anhydride grafted propylene-ethylene-ethylidene norborene terpolymer as an example of a typical rubbery copolymer, however, Dr. Sigworth further stated that adding *any coupling agent comprising a rubbery copolymer*, such as propylene-ethylene copolymer or propylene-ethylene-ethylidene norborene terpolymer to a natural fiber-filled polyolefin composition would reduce the tensile modulus or stiffness of the resultant fiber-filled polyolefin composition. (Declaration, Item 7). Thus, Dr. Sigworth stated that, generally speaking, any coupling agent that has rubbery characteristics should adversely affect the stiffness of the resultant composition. Dr. Sigworth's statements, with regard to rubbery copolymers or terpolymers, are certainly not limited to the propylene-ethylene-ethylidene norborene terpolymer that was used as an example in the Declaration. The propylene-ethylene containing copolymers of Botros and the propylene-ethylene-ethylidene norborene terpolymer utilized in the Declaration both have components other than a homopolymer of polypropylene and both are rubbery. The Declaration shows that adding the rubbery copolymers results in a change in physical properties, which would be a change in the basic characteristics of the coupling agent. Further, the Office Action's allegation that the copolymer tested in the Declaration is not covered by Botros is immaterial because both copolymers share the same characteristics that are being tested, e.g., they are both rubbery. Accordingly, one of ordinary skill in the art would clearly expect that the addition of Botros' coupling agent, which contains a rubbery component, would materially affect the basic and novel characteristics of the claimed invention, e.g., would result in a natural fiber-filled composition having reduced tensile and stiffness properties. Thus, Botros' coupling agent cannot meet the language of Claims 1, 14, and 15.

It is well established that a claim can be rejected under 35 U.S.C. §102 "if each and every element as set forth in the claim is found . . . in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, (Fed. Cir. 1987). As indicated above, the coupling agent of Botros cannot meet features of the claimed coupling agent. Thus, Botros cannot anticipate Claims 1, 14, and 15 and the rejection should be withdrawn.

C. The references fail to teach the claimed coupling agent.

Independent Claim 15 and dependent Claim 4 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Botros in view of U.S. Patent No. 6,682,789 to Godavarti, et al. (hereinafter “Godavarti”), and U.S. Patent No. 5,075,359 to Castagna, et al. (hereinafter “Castagna”). Applicant traverses the rejection in view of the claim amendments and the following arguments.

As indicated above, Botros fails to teach the coupling agent of Claim 15. Godavarti is only cited for teaching the use of wood fiber. Castagna is only cited for teaching the use of fatty acid esters as lubricants. Godavarti and Castagna do not teach or suggest the claimed coupling agent. For at least the reasons mentioned above, Botros, Godavarti and/or Castagna, alone or in combination, fail to teach the coupling agent of Claim 15.

It is well settled that the Patent Office bears the burden of establishing a *prima facie* case of obviousness under 35 U.S.C. § 103. (See *In re Deuel*, 51 F.3d 1552, 1557 (Fed. Cir. 1995)). To establish a *prima facie* case of obviousness, the Patent Office must show *inter alia* that the prior art teaches or suggests every claim limitation. (See *Manual of Patent Examination and Procedure (MPEP)* § 2143; *In re Vaeck*, 20 U.S.P.Q.2d 1438, 1442 (Fed. Cir. 1991)). As indicated above, Botros, Godavarti, and/or Castagna fail to teach the claimed coupling agent. Thus, Botros, Godavarti, and/or Castagna fail to teach or suggest every feature of Claim 15 and a *prima facie* case of obviousness cannot be established. Accordingly, Claim 15 is patentable over Botros, Godavarti and/or Castagna. The rejection should be withdrawn.

D. Dependent Claims.


Dependent Claims 2-7, 9, and 11-13 depend from their respective independent claims and include all the features thereof. Independent Claims 1, 14, and 15 are patentable for the reasons discussed above. Dependent Claims 2-7, 9, and 11-13 are patentable for at least the same reasons. The rejections should be withdrawn.

E. Conclusion.

In view of the above, it is believed that this application is in condition for allowance, and a Notice thereof is respectfully requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3620. All correspondence should continue to be directed to the address given below.

Respectfully submitted,



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